The Central Plateau

Restore the River Corridor • Transition the Central Plateau • Prepare for the Future

200 East Area

200 West Area

Steel tubes in the Canister Storage Building where spent nuclear fuel is safely stored awaiting shipment to the national geologic repository.

B Plant

Background

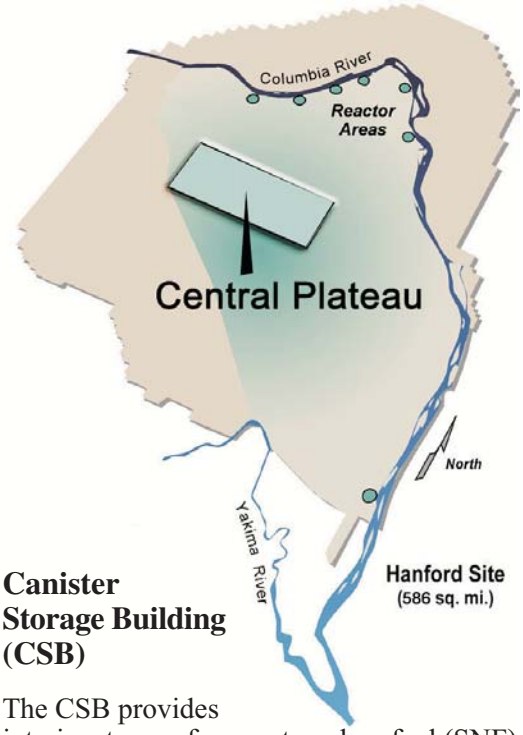
The Central Plateau is an area of approximately 75 square miles located in the middle of the Hanford Site and is 200-250 feet above the water table. Fuel was irradiated in the production reactors in the 100 Area, and chemically processed to separate and recover plutonium for use in nuclear weapons in the 200 Area. There are 900 excess facilities formerly used in the plutonium production process, including 5 massive chemical processing facilities (called canyons), as well as about 800 individual waste sites, which include both buried solid waste and contaminated soil. The Central Plateau has ongoing waste management operations, including low-level waste burial grounds, liquid waste facilities, the Waste Receiving and Processing Facility, and 177 underground high-level waste tanks.

200 East Area

B Plant and the Plutonium-Uranium Extraction Plant (PUREX)

Two chemical processing plants, B Plant and the PUREX Plant, were built to separate plutonium for use in the atomic bomb. B Plant was constructed between 1943 and 1945 as part of the Manhattan Project. After its original mission ended, B Plant was modified for the recovery, separation, and purification of strontium and cesium from liquid wastes stored in Hanford's underground tanks. Operations at B Plant ended in 1985, and it was fully deactivated in 1998.

From 1956 to 1989, PUREX was the workhorse of the nation's nuclear arsenal, producing two-thirds of the U.S. plutonium inventory. About 60 metric tons of plutonium was produced at Hanford -- 80 percent of it at PUREX. PUREX was successfully deactivated in 1997 when Hanford's mission moved from plutonium production to environmental cleanup.

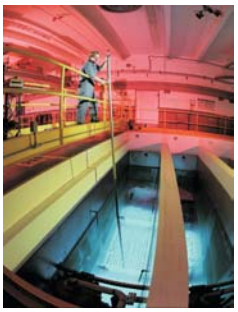


Canister Storage Building (CSB)

The CSB provides interim storage for spent nuclear fuel (SNF) being removed from water-filled basins near the Columbia River. Containers, known as Multi-Canister Overpacks (MCO), of dried spent nuclear fuel are stored in one of the three CSB vaults. The CSB vaults are below ground level and are comprised of 220 40-foot deep storage tubes, each capable of holding two MCOs. Inside the tubes, the fuel is passively cooled in a low-maintenance, economical manner by natural circulation of the outside air. CSB was designed to provide safe storage and surveillance of the fuel for at least 40 years.

Waste Encapsulation Storage Facility (WESF)

WESF operated from 1974 to 1985 to encapsulate cesium and strontium that was separated from high-level waste in the adjoining B Plant.



Cesium and strontium capsules underwater.

Currently, WESF safely stores 1,936 cesium and strontium capsules in deep pools of water, which cool the capsules and provide radiological shielding for workers. The stored capsules contain 130 million curies of radioactivity -- about 37 percent of the total radioactivity of Hanford Site wastes.

200 West Area

Plutonium Finishing Plant (PFP)

PFP was built in 1948, and one year later it began to process plutonium nitrate solutions into a metallic form for shipment to nuclear weapons production facilities. The U.S. Department of Energy (DOE) operated PFP until 1989. At the end of the Cold War, many of the weapons production lines were shut down with material still in various stages of the production process. Hanford was left with large quantities of reactive plutonium materials in several different forms, such as liquids, solids, and residues. Hanford is currently using state-of-the art technologies to clean out and stabilize the remaining plutonium materials. Work at PFP is ahead of schedule -- as of August 2003, solutions are completely stabilized, residues are completely stabilized, and solids are at 44 percent completion. Workers are also beginning the difficult task of cleaning out miles of contaminated ducting throughout the PFP complex. Decontamination and removal of the ducting is part of Hanford's plan to clean out and demolish the facility by 2009.

The Plutonium Finishing Plant

Waste Receiving and Processing Facility (WRAP)

WRAP began operations in 1997 as the first major facility in the DOE complex to handle transuranic (TRU) waste. WRAP inspects, treats, and repackages mixed low-level (MLLW) and TRU waste to ensure it meets acceptance criteria of appropriate disposal facilities, such as the Waste Isolation Pilot Plant (WIPP) in New Mexico. Once TRU characterization is complete, the waste is ready for shipment to WIPP where it is disposed underground. The mixed waste is disposed at Hanford.

A drum is sent through an x-ray machine at WRAP to view its contents.

Low-level Burial Grounds (LLBG)

The LLBG provide disposal of low-level waste (LLW) and storage and disposal of MLLW. Some TRU waste is also retrievably stored in the LLBG. Over the past 50 years, the burial grounds have received radioactive solid wastes from Hanford's cleanup operations and from offsite generators.

Waste Sampling and Characterization Facility (WSCF)

WSCF is composed of an analytical laboratory and seven support facilities. Its role is to analyze low-level radioactive and nonradioactive samples of soil, liquids, and air to ensure they meet regulated discharge limits to the environment. WSCF has been operating since 1994.

T Plant/U Plant/Reduction Oxidation Plant (REDOX)

The T Plant Complex, built in 1943, was the first and largest chemical processing plant built at the Hanford Site during the Manhattan Project, and the first of its kind in the world. T Plant was originally built to extract plutonium from spent nuclear fuel. The material used in the nuclear bomb that ended World War II was processed in T Plant. The plant was shut down in 1956 and converted to a decontamination facility where radioactive and hazardous solid waste is processed and packaged to applicable state and federal guidelines. DOE also selected T Plant as the best site for safe, stable interim storage of the K Basins' radioactive "sludge." Sludge transfers to T Plant are scheduled to begin in the summer of 2003.

Workers clean off the deck of T Plant.

Another chemical processing plant, "U," was constructed in 1944 and performed nearly the same functions as T Plant. The third and final processing plant in the 200 West Area is known as REDOX. It began operations in 1952 and is now shutdown.

For more information

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